THIS IS ONE VOLUME OF A SIX VOLUME SET WHICH INCLUDES:

VOLUME I: FIELD OPERATIONS (FO)
VOLUME II: GROUNDWATER (GW)
VOLUME III: GEOTECHNICAL (GT)
VOLUME IV: SURFACE WATER (SW)
VOLUME V: ECOLOGY (EE)
VOLUME VI: AIR (AP)

TABLE OF CONTENTS FOR VOLUME II: GROUNDWATER

This is a
CONTROLLED DOCUMENT
EG&G - ROCKY FLATS PLANT
ENVIRONMENTAL MANAGEMENT
This is a RED Stamp

ENVIRONMENTAL MANAGEMENT DOCUMENT CHANGE NOTICE (DCN)

Procedure Number 5-21000-OPS-GW.2, REV.2

Title	Date	DCN Number
Well Development	8/3/92	9201 5-21000-OPS-GW.2

Expires 2/3/93 Procedure Revision Required [X] Yes [ ] No

Scope Limitation None

Item Number	Page	Step or Paragraph	Changes (Use DCN Continuation Sheet for Additional Space)
1	6 of 11	5.2.1.1	Subsection 1, fifth sentence; change the sentence to read, "A well will be developed as soon as practical but during the same quarter following a WLM which indicates the well is not dry (water covering at least one foot of the screened interval)," rather than being developed in two weeks after a WLM indicates that a portion of the screened interval is covered with water.
2	B1,B2		Replace the old form titled, "Rocky Flats Plant Ground Water Well Redevelopment Log," with the new form attached.

Justification (Reason for change – Provide numbers to reference corresponding items above)

1. Two weeks may not be an adequate time frame to fit development into schedule. Field experience also indicates that water must be covering at least one foot of the screen to be successful.
2. Improved form.

Concurrence	Organization	Req	Date	Concurrence	Organization	Req	Date
	QAPM	X	10/5/92		User	X	
M.C. Ramsey	EQM	X	10-2-92				

Approval of Responsible Manager	Date	Is Posting Reqd?	If Yes, By What Date?	Date Posted
	8/31/92	[X] Yes [ ] No		

DCN Form 001

U.S. DEPARTMENT
OF ENERGY

REVISION 1.3

ROCKY FLATS PLANT
GROUND WATER WELL REDEVELOPMENT LOG

PROJECT NAME: Ground Water Re-Development
WELL I.D.: _____
PROJECT NO.: 304902.___ ___.___ ___.___ ___
TEAM MEMBERS: _____
QC REVIEW BY/DATE: _____
SAMPLES COLLECTED BY: _____
SOLINST: _____ _____
SERIAL NUMBER CALIBRATION DATE
DATE: _____

PURGE METHOD - TYPE USED:
☒ BAILER ☐ PNEUMATIC ☒ PERISTALTIC ☐ INERTIA ☐ OTHER _____

☒ BAILER ☒ TEFLON ☐ STAINLESS ☒ OTHER _____

PURGING REQUIREMENTS & CALCULATIONS - DATUM: TOP OF WELL CASING (TOWC)

ID = WELL CASING INSIDE DIAMETER (INCHES) = _____

UV = UNIT CASING VOLUME (GAL/LINEAR FOOT) = _____

WD = DEPTH TO WATER (FEET) = _____

TD = TOTAL DEPTH (FEET) MEASURED TOTAL DEPTH (MTD) + PROBE END _____

IC = INITIAL WATER COLUMN (FEET) = TD - WD = _____ - _____ = _____

IV = INITIAL WATER VOLUME (GALLONS) = UV x IC = _____ x _____ = _____

CHECKED BY: _____

PURGED VOLUMES AND RECHARGE

VOLUME PURGED (GAL)	TEMPERATURE °C	CONDUCTANCE (ms/cm)	pH (SU)	DO (mg/L)	NITRATE (ppm)	TIME (24 HOUR)	TURBIDITY (FTU)	WATER DESCRIPTION (COLOR, TURBIDITY, ODOR, OIL, ETC.)

EQUIPMENT CALIBRATION

EQUIPMENT TYPE	EQUIPMENT ID NUMBER	STANDARD USED/LOT NUMBER	EQUIPMENT READING	TEMERATURE (°C)	DATE	TIME

FINAL TOTAL DEPTH FROM
MARK ON NORTH SIDE OF INNER CASING

TEAM MEMBER	READING	TOTAL DEPTH	PROBE END	MEASURED TOTAL DEPTH	AVG. MEAS. TOTAL DEPTH

SIGNATURE: _____

DATE: _____

ROCKY FLATS PLANT
GROUND WATER WELL REDEVELOPMENT LOG
(Continued)

COMMENTS

VOLUME 1

VOLUME 2

VOLUME 3

VOLUME 4

This is a
CONTROLLED DOCUMENT
EG&G - ROCKY FLATS PLANT
ENVIRONMENTAL MANAGEMENT
This is a RED Stamp

ENVIRONMENTAL MANAGEMENT DOCUMENT CHANGE NOTICE (DCN)

Procedure Number 5-21000-OPS-GW.6, REV.2

Title	Date	DCN Number
Groundwater Sampling	8/3/92	9201 RFP 5-21000-OPS-GW.6

Expires 2/3/93 Procedure Revision Required [x] Yes [ ] No

Scope Limitation None

Item Number	Page	Step or Paragraph	Changes (Use DCN Continuation Sheet for Additional Space)
1	A1		Appendix A : Replace old form titled, "Field Activity Daily Log," with the new one attached.
2	B1, B2		Appendix B : Replace old form titled, "Rocky Flats Plant Ground Water Sample Collection Log," with the new one attached.
3	C1		Appendix C : Replace old form titled, " Well Status Form," with the new one attached.

Justification (Reason for change -- Provide numbers to reference corresponding items above)
1,2,3. Improved forms.

Concurrence	Organization	Req	Date	Concurrence	Organization	Req	Date
	QAPM	X	10/5/92		User	X	
M.C. Brossard	EOM	X	10-2-92				

Approval of Responsible Manager	Date	Is Posting Reqd?	If Yes, By What Date?	Date Posted
	8/31/92	[x] Yes [ ] No		

DCN Form 001

U.S. DEPARTMENT
OF ENERGY
ROCKY FLATS PLANT

DAILY LOG	DATE			1992
	NO.			
	SHEET		OF	

FIELD ACTIVITY DAILY LOG

ROCKY FLATS PROJECT: Ground Water Sampling Program	PROJECT NO.: 304902.
FIELD ACTIVITY SUBJECT:	
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:	

VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS,
WEATHER CONDITIONS:(precip.,temp.,clouds)	IMPORTANT TELEPHONE CALLS:
SAMPLING TEAM PERSONNEL:	
SIGNATURE OF PREPARER:	DATE:

FIELDLOG 05/20/92 10:43am RLH

U.S. DEPARTMENT
OF ENERGY

ROCKY FLATS PLANT
GROUND WATER SAMPLE COLLECTION LOG

PROJECT NAME: Quarterly Ground Water Sampling
PROJECT NO.: 304902.___ ___.___ ___.___ ___
COC/RFA NO.:_____
COC/RFA NO.:_____
COC/RFA NO.:_____
QC REVIEW BY/DATE:_____

SAMPLE NO.: GW ___ ___ ___ ___ ___IT
WELL I.D.:_____
SAMPLES COLLECTED BY:_____
ZONE:_____ _____
DATES COLLECTED:_____

PURGE METHOD – TYPE USED:
☐ BAILER ☐ TEFLON
☐ OTHER _____

CASING SIZE (INCHES) (A)	1	2	3	4	6
UNIT CASING VOLUME (GAL/LIN FT.) (B)	0.04	0.16	0.37	0.65	1.50

PURGING REQUIREMENTS & CALCULATIONS – Datum: Top of Casing (TOWC) PURGE DATE:_____
ID = WELL CASING INSIDE DIAMETER (INCHES) =_____
UV = UNIT CASING VOLUME (GAL/LINEAR FOOT) =_____
WD = DEPTH TO WATER (FEET) =_____
TD = TOTAL DEPTH (FEET) MEASURED TOTAL DEPTH (MTD) + PROBE END_____
IC = INITIAL WATER COLUMN (FEET) = TD – WD = _____–_____=_____
IV = INITIAL WATER VOLUME (GALLONS) = UV x IC =_____x_____=_____
SD = DEPTH TO TOP OF SCREEN =_____– 2FEET = _____
IS WD LESS THAN SD – 2 FEET? (Y/N)_____IF Y THEN:
AC = ADJUSTED WATER (FEET) = TD – SD =_____–_____=_____
AV = ADJUSTED CASING VOLUME (GAL) = UV x AC =_____x_____=_____
THEN 2 x AV = 2 x_____=_____(GAL)
IF N. THEN 3 x IV = 3 x_____=_____(GAL) CHECKED BY:_____

PURGED VOLUMES AND RECHARGE

VOLUME PURGED (GAL)	TEMP °C	CONDUCTANCE (ms/cm)	pH (SU)	DO (mg/L)	NITRATE (ppm)	TIME (24 HOUR)	TURBIDITY (FTU)	WATER DESCRIPTION (COLOR, TURBIDITY, ODOR, OIL, ETC.,)

PURGE VOLUMES & RECHARGE
ACTUAL PURGED VOLUME (GALLONS) =_____PURGED DRY? (Y/N) =_____
90% OF IC = 0.9 x IC (OR AC) = 0.9x_____=_____
10 MINUTE WATER LEVEL RECOVERY: TIME START_____TIME STOP_____
ER = ESTIMATED 30 MINUTE RECHARGE = (TD – 10 MINUTE WD) x 3 = (_____–_____) x 3 =_____
DEPTH TO WATER PRIOR TO SAMPLING_____ VOLUME _____ TIME _____ DATE _____
DEPTH TO WATER PRIOR TO SAMPLING_____ VOLUME _____ TIME _____ DATE _____
2nd 10 MIN. RECHARGE: ER = (_____–_____) X 3 =_____
3rd 10 MIN. RECHARGE: ER = (_____–_____) X 3 =_____ CHECKED BY: _____

U.S. DEPARTMENT
OF ENERGY

REVISION 1.4

ROCKY FLATS PLANT
GROUND WATER SAMPLE COLLECTION LOG
CONTINUED

PROJECT NAME: Quarterly Ground Water Sampling SAMPLE NO.: GW____ ____ ____ ____ ____ IT

PROJECT NUMBER: 304902.___ ___.___ ___.___ __ WELL I.D.: _____

EQUIPMENT TYPE	EQUIPMENT ID#	STANDARD USED LOT NUMBER	EQUIPMENT READING	TEMPERATURE (°C)	DATE	TIME

SAMPLE METHOD – TYPE USED:

☐ PUMP ☐ PERISTALTIC

☐ BAILER ☐ TEFLON

☐ OTHER _____

PH OFFSCALE _____

☐ YES TOTAL ALKALINITY:_____ x 10_____ ppm AT_____ pH

☐ NO TOTAL ALKALINITY (FULL RANGE)_____ ppm AT_____ pH

NITRITE _____ mg/l – BLANK VALUE _____ mg/l

= FINAL NITRITE _____

FINAL DO _____ mg/l CHECKED BY: _____

TEMP (°C)	pH (SU)	CONDUCTIVITY (ms/cm)	DO (mg/L)	DATE	TIME	TURBIDITY (FTU)	INITIALS

ANALYSIS	PARTIAL / FULL	RAD	VOA	RAD. ISO.	INORG.	NITRATE	BNA	PCB PESTICIDE	α,β,ρ	α,β,ρ Ce,Ra,Sr	DISS. METALS	TOTAL METALS	TOC	COD	AMMONIA	Pu/Am	TRIT
	VOLUME	100 ml	(2) 40ml	100 ml	1 LITER	250 ml	(2) 1 LITER	(2) 1 LITER	1 LITER	GAL	1 LITER	1 LITER	125 ml	125 ml	1 LITER	GAL	100 ml
	PRES.					H_2SO_4			HNO_3	HNO_3	HNO_3	HNO_3	H_2SO_4	H_2SO_4	H_2SO_4	HNO_3	
									FILTER	FILTER	FILTER						
	DATE																
	TIME																
NO. OF BOTTLES																	

ANALYSIS	PARTIAL / FULL	Pu	Am	Ce,Ra,Sr	CYANIDE	ORTHO-PHOS-PHATE	OTHER
	VOLUME	GAL	GAL	GAL	1 LITER	250 ml	
	PRES.	HNO_3	HNO_3	HNO_3	NaOH		
				FILTER		FILTER	
	DATE						
	TIME						
NO. OF BOTTLES							

COMMENTS: _____

PRINT NAME: _____

SIGNATURE/DATE: _____

U.S. DEPARTMENT OF ENERGY
ROCKY FLATS PLANT

WELL STATUS FORM

TEAM MEMBERS: _____

DATE: _____

REVISION 1.4
GROUND WATER SAMPLING PROGRAM
PROJECT NO.:304902

WELL NUMBER	PURGE	RAD SCREEN	VOA (2)	RAD ISO.	INORG.	NIT.	BNA	PCB PEST.	α,β,υ	α,β,υ Cs,Ra,Sr	DISS. METALS	TOTAL METALS	TOC	COD	AMMONIA	Pu/Am	TRIT	Pu/Am	Cs,Ra,Sr	CYANIDE	0 PHOS	OTHER	PARTIAL
		100 ml	40 ml	100 ml	1 LITER	250 ml	(2) 1 LITER	(2) 1 LITER	1 LITER	GAL	1 LITER	1 LITER	125 ml	125 ml	1 LITER	GAL	100 ml	2 GAL	GAL	1 LITER	250 ml		FULL
									YES	YES	YES	NO							YES		YES		VOLUME
						H_2SO_4			HNO_3	HNO_3	HNO_3	HNO_3	H_2SO_4	H_2SO_4	H_2SO_4	HNO_3		HNO_3	HNO_3	NaOH			FILTER
																							PRES.

X1 = DAY ONE
X2 = DAY TWO

_____ / _____
SIGNATURE DATE